
ENVIRONMENTAL Fact Sheet



29 Hazen Drive, Concord, New Hampshire 03301 • (603) 271-3503 • www.des.nh.gov

WD-WSEB-26-14

2001

Water Efficiency Practices for Health Care Facilities

Health care facilities with steam sterilizers, autoclaves, x-ray equipment, and in-house laundries or kitchens can be significant water consumers, using as much as 30,000 gallons of water a day. The water efficiency practices found in this fact sheet can save considerable water and water-related costs. A comprehensive audit should be performed to assess the facility's water system and identify locations where these practices can be employed to conserve water. See fact sheet, [*Performing a Business or Industry Water Use and Conservation Audit*](#), for directions.

Domestic/Sanitary Water Efficiency Practices

Approximately 35 percent of the total water use at health care facilities goes to domestic purposes, plumbing fixtures and appliances.

- Install ultra low flow toilets (ULF) that use a maximum of 1.6 gal/flush (6.0L/flush) or retrofit existing toilets with displacement bottles or dams. Install ULF urinals that use a maximum of 1.0 gal/flush (3.9L/flush).
- Install low flow faucet aerators or laminar flow restrictors that limit flow to <2.5gpm.
- Install low flow showerhead devices that limit flow to <2.5gpm.
- Install flow restrictors on plumbing fixtures wherever possible.
- Install automatic faucet shut off valves in public water use areas.
- Eliminate automatic/continuous water flushing systems in urinals and toilets.
- Replace older model piped-in drinking water fountains with stand-alone water coolers/dispensers.
- Replace top loading vertical axis washing machines with front-loading horizontal axis types.
- If a commercial type laundry exists onsite, consider using tunnel or similar washers that recycle the final rinse water into the next wash cycle. See fact sheet, [*Water Efficiency Practices for Laundries*](#).

Sterilizing Equipment Water Efficiency Practices

Sterilizers and autoclaves can use a significant amount of water if run constantly. The following water efficiency practices can save water when using these devices.

- Install automatic shut-off valves, when possible, to shut off water flow to the unit when not in use. If shut off is not possible determine the minimum flow the unit can sustain and set it to this level.
- Shut down the sterilizer when not in use, if possible.

- Recycle steam condensate and non-contact cooling water from sterilizers to make-up water in cooling towers or boilers.
- As they wear out, replace old sterilizers with water efficient models with water recirculation automatic shut off.
- Run the sterilizer or autoclave with full loads only. If the device you presently use is too large to routinely run full loads, replace it with a smaller capacity model.

X-Ray Equipment Water Efficiency Practices

X-ray equipment uses water in the processing of prints. The following water efficiency practices will help save water when using this type of equipment.

- Adjust flow rates in rinse baths to the minimum recommended by the manufacturer.
- Install solenoid-controlled flow valves to shut off units when not in use.
- Reuse rinse bath water for make-up water in the developer solution.
- Install flow meters and regulators to limit the rinse water flow rate.

Kitchen/Cafeteria Water Efficiency Practices

Large quantities of water are used in the food preparation process. The following water efficiency practices can save significant amounts of water in kitchens and cafeterias.

- Minimize pre-wash spray systems and replace spray heads with low flow models.
- Use high pressure, low volume nozzles for increased cleaning efficiency.
- Install automatic shut off valves or shut off water when not in use.
- Remove garbage disposals or reuse wash and rinse water for disposal purposes. Composting food waste is a practical disposal method for water conservation and nutrient recycling.
- Replace water-cooled machines with air-cooled models or recirculating non-contact cooling systems.
- Reuse non-contact cooling water for other purposes.
- Upgrade to water-saving machinery as old equipment wears out.
- Install on-demand point-of-use water heating systems to eliminate the need to purge lines for hot water. Insulate pipes to retain heat.
- Operate dishwashers with full loads only and shut them off when not in use. Install sensors on conveyor systems that automatically shut off water when no dishes are present.
- Utilize high temperature rinse dishwashers rather than low temperature ones, as they require less water and wash more racks per hour.
- Consider using ultrasonic pre-rinse units.
- Pre-rinse utensils and dishes in a water basin.
- Rinse vegetables in a water basin.
- Reuse rinse water where appropriate for pre-rinsing, dish washing, garbage disposers, or scrapping troughs.
- Eliminate or minimize water flow through scrapping troughs.
- Do not use running water to melt ice or frozen foods.

Dartmouth-Hitchcock Medical Center in Lebanon, New Hampshire replaced toilets and urinals with water efficient models, installed flow restrictors on all faucets and kitchen equipment, and installed recirculation systems on their autoclaves, RO/DI water treatment, medical air and vacuum pumps and boiler blowdown wastewater and now save an average of \$100,000 a year in water, sewer, and energy costs.

Outdoor Water Efficiency Practices

Outdoor water use can be a significant portion of total use by a facility, especially if large turf areas are irrigated. The following water efficiency practices will help save water in outdoor applications at your facility. See fact sheet, [Water Efficiency Practices for Outdoor Water Use](#) for a more detailed discussion.

- Cover outdoor swimming pools when not in use to prevent evaporative losses.
- Wash fleet vehicles less often.
- Sweep parking lots, driveways, walks and steps rather than hosing them off.
- Landscape watering frequency should be based on soil moisture, weekly precipitation and plant/turf conditions. Typically, established landscape plants and turf grass require an inch of water per week, and this amount may be applied in one application.
- Employ an automatic timer on outdoor irrigation systems.
- Be sure sprinkler heads are producing drops rather than a mist. This helps reduce evaporative losses.
- Incorporate soil moisture and rain sensors into automatic sprinkler systems.
- Operate automatic sprinkler systems only when the water demand is low, usually between 4-6 a.m.
- Don't water the pavement. Adjust sprinklers so that they water just the plants.
- Plant drought-resistant turf grass. The most drought-tolerant grasses are the fine leaf fescues. The University of New Hampshire Cooperative Extension recommends a mix containing hard fescue, Chewings fescue and perennial ryegrass.
- Soil moisture sensors are useful in determining how wet your soil is. You can check the moisture of the soil to determine watering needs. In some instances you will find that you do not need to water even if it has not rained recently. Water should be applied until the soil moisture meets the Cooperative Extension's recommendations for your soil type.
- Check soil moisture before watering, even if it hasn't rained. Then spot water, irrigating only those areas that are dry. Water by hand, if possible.
- Do not irrigate during windy conditions.
- Use hose nozzle shutoff devices
- Utilize drip or trickle irrigation wherever possible. These systems apply water near the root zone of the plant, ensuring a complete watering while eliminating excess water usage.
- Use mulch wherever possible.
- Minimize your lawn area. Replace grass with moss, rocks, gravel, wood chips or mulched flowerbeds. Consider xeriscape or Zen gardens. Xeriscaping effectively utilizes drought tolerant vegetation that subsists on precipitation alone. Zen gardens traditionally contain no vegetation whatsoever, usually only raked sand, sculpture and a water feature.
- Plant species native to New Hampshire. Native plants are hardier and tend to need less water. Check out the New England Wildflower Society's website for a complete listing of native plants they offer for sale, www.newfs.org/availp2.htm. Or contact the New Hampshire Chapter of the Society at (603) 964-1982 for advice on native plantings.

For Additional Information

Contact Water Supply Engineering Bureau at 603-271-2513 or visit our website at www.des.nh.gov/ws.htm

UNH Cooperative Extension. Turf management and irrigation.

<http://www.ceinfo.unh.edu/Agric/AGNLT.htm>

US EPA, Energy Star, Listing of commercial washers that meet the Energy Star rating.

http://www.energystar.gov/index.cfm?fuseaction=clotheswash.display_commercial_cw

References:

_____; *MIL-Handbook-1165, Water Conservation*; US Dept. of Defense; 1997; pp 66-67.

Vickers, Amy; *Handbook of Water Use and Conservation*; WaterPlow Press, Amherst, MA; 2001; pp 256-257, 265-280.